

Date: Wed, 15 Dec 93 04:30:38 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V93 #133
To: Ham-Homebrew

Ham-Homebrew Digest Wed, 15 Dec 93 Volume 93 : Issue 133

Today's Topics:

 Built in transmatch
 Receiver questions ...
 Two-Fer Instability on 20 Meters
 Wanna build a VLF receiver: Question

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 14 Dec 93 16:05:46 GMT
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu
Subject: Built in transmatch
To: ham-homebrew@ucsd.edu

In article <2693@arrl.org> zlau@arrl.org (Zack Lau) writes:
>In rec.radio.amateur.homebrew, gary@ke4zv.atl.ga.us (Gary Coffman) writes:
>>In article <2675@arrl.org> zlau@arrl.org (Zack Lau) writes:
>>>Has anyone figured how to design an RF output stage
>>>with a built in transmatch that can't be mistuned
>>>as a frequency multiplier?
>>
>>Normal practice is to *not* design tank circuits that can
>>resonate across multiple octaves. That doesn't normally
>>limit the range of impedances a network can match, but it
>>does limit the types of networks that can be used.
>
>This is easy if you are designing it to run into a *known*
>impedance. But, if you want you matching network to also

>operate as a transmatch, you have now have a real challenge.

Only if your idea of a transmatch is a network similar to the boxes commonly sold today. Consider instead a parallel tank circuit with link coupling. With a swinging link, a wide variety of impedances can be matched without the necessity of having a network that can resonate over several octaves. The secret of course is that untuned link. You can add an L network after it, or just a simple capacitor or inductor, in order to absorb any reactances in the load impedance.

Gary

--

Gary Coffman KE4ZV	I kill you,	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	You kill me,	uunet!rsiatl!ke4zv!gary
534 Shannon Way	We're the Manson Family	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244	-sorry Barney	

Date: Tue, 14 Dec 1993 14:40:35 GMT
From: rd1.InterLan.COM!sun1.interlan.com!tavernin@uunet.uu.net
Subject: Receiver questions ...
To: ham-homebrew@ucsd.edu

I just recently purchased a Ten-Tec Century 21 and I noticed that the receiver's sensitivity is rather poor (it's spec'd at 1uV) and I was wondering ...

The receiver is a double direct conversion design, eg. -

T/R Switch

Bandpass Filters

Xtal Osc --> Mixer

I.F. Amp

VFO --> Product Detector

Audio Amp

and it has no gain stage in from of the first mixer ... would a broadband preamp increase performance significantly!? Would the proper place to insert a preamp be between the T/R Switch and the Bandpass Filters?

How much gain and what type of noise figure should the preamp have?

On a side note ... I called Advanced Receiver Research and they have a 1-30MHz preamp with 20dB gain and 2.5db NF ... is this a suitable unit? And (one last question :-)) does anybody have any experience with Advanced Receiver Research products?

Thanks,

Victor Tavernini
Racal-Datacom, Inc.

tavernin@sun1.interlan.com

Date: Tue, 14 Dec 1993 14:39:11 GMT
From: mnemosyne.cs.du.edu!mercury.cair.du.edu!awinterb@uunet.uu.net
Subject: Two-Fer Instability on 20 Meters
To: ham-homebrew@ucsd.edu

Having built one of the "twofer" rigs (transmitter only) for 30 meters, I decided to build another "multiband" version based on some info in a recent QRP ARCI article. The "twofer" is supposed to be pretty broadbanded, so to make it multiband means just building a set of switchable low-pass filters at the output. Mine were rudimentary 3-pole ones.

Anyhow, it works fine on 30 meters. On 20 meters, however, it seems to be unstable. Although I can't hear too much on the station receiver, other stations remark that the signal shifts a bit in frequency on key-down. It's not a chirp, but just a slight downward shift a few hertz or so.

One station suggested that I vary the capacitive coupling between the oscillator and the driver stages. I increased that value from 33 pf to 150 pf, which did increase power output some. However, it didn't fix the frequency shift.

The output power of the driver can be varied by varying resistance on its emitter. Although I've had different values in there in the past without noticeable effect, I'm going to put a variable resistor in there to further investigate what effects that may have on stability in case the biasing of the driver can affect the previous oscillator stage.

One other thing I may do is jumper the RFC that's in series with the crystal. I'm using 32 pf crystals in HC6 holders.

I wonder if anyone else has had similar problems with the "twofer."
I haven't tried the rig on other bands for which I've built filters
(40, 17, and 15 meters) due to lack of crystals. However, I'd also be
interested in similar problems anyone's experienced on other bands.

73 de Art

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Date: 14 Dec 93 23:20:07 GMT
From: news-mail-gateway@ucsd.edu
Subject: Wanna build a VLF receiver: Question
To: ham-homebrew@ucsd.edu

Do you want a stand-alone receiver, or would a converter (to, say, an
HF band) do the trick?

Also, what is it that you want to hear? Whistlers, OMEAGA, LORAN-C,
the military's RTTY, LowFERs, NDB's?

(oops. OMEGA, not OMEAGA...)

What you are interested in hearing has a great bearing on what form the
receiver would take.

I have some of the info you need, but it might help to narrow it down
a tad...

73

<Clint>

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End of Ham-Homebrew Digest V93 #133
